

INJECTION MOLDING NOZZLE STRUCTURED FOR COOLING AT EXTREME TIP

ABSTRACT OF THE DISCLOSURE

A nozzle for injection molding is made of a thermally conductive metal material but is thermally conductively blocked or interrupted. An abrupt reduction in wall thickness and/or a gap in the continuity of thermally conductive material occur along the nozzle material passageway. This provides a localized restriction to thermal conduction, causing a reduction in heat flow from the mold to the material supply while cooling the melt material near the end of the nozzle. This material, which is relatively cooled to near the mold temperature, becomes the last injected material when filling of the mold is completed, occupying the area of the sprue. As a result, the sprue is relatively cool, thus reducing stringing and shortening mold cycle time.